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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/559,643

12/02/2005

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PU040104

7307

24498 7590 05/03/2011  
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EXAMINER

THOMPSON, JAMES A

ART UNIT

PAPER NUMBER

2625

MAIL DATE

DELIVERY MODE

05/03/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/559,643

Applicant(s)

BOYCE ET AL.

Examiner

James A. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2011 and 21 February 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. In view of the Appeal Brief filed on 21 February 2011, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Mark K Zimmerman/

Supervisory Patent Examiner, Art Unit 2625.

### **Claim Rejections - 35 USC § 102**

2 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**3. Claims 1, 4, 6-8, 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Gunatilake (US-2004/0194134).**

**Regarding claims 1 and 10:** Gunatilake discloses a video decoder for receiving compressed stream data and providing decompressed video output (**fig. 3 and para. 36, lines 1-14 of Gunatilake**), the decoder comprising:

a demultiplexor (**fig. 3(304 – demux portion) of Gunatilake**) for receiving the compressed stream data and separating a normal stream and a channel change stream therefrom (**fig. 3(301→302,309→302); para. 36, lines 13-14; and para. 38 of Gunatilake** - both channel change stream and normal stream are input into the demultiplexer and used to decode the selected channel for display), the normal stream and the channel change stream each being generated external to the video decoder and comprising a plurality of pictures for a same program (**fig. 3(301) and para. 36, lines 3-10 of Gunatilake**);

a normal decoding portion (**fig. 3(304 – mpeg decode portion) of Gunatilake**)) in direct signal communication with the demultiplexor (**demultiplexor and decoder are within the same unit shown in fig. 3 of Gunatilake**) for selectably receiving at least one of the compressed normal and channel change streams, and providing decompressed video output (**para. 36, lines 10-14 of Gunatilake – mpeg decoding involves video decompression**); and

at least one normal frame store (**fig. 3(315) of Gunatilake**) in signal communication with the normal decoding portion (**fig. 3(315→304) of Gunatilake**) for storing reference pictures for use in decoding inter-coded pictures (**para. 37, lines 4-18 of Gunatilake**).

Further regarding claim 10: The method of claim 10 is performed by the video decoder of claim 1.

**Regarding claim 4:** Gunatilake discloses means for selecting a compressed picture to decode from one of a normal stream and a channel change stream (**para. 38 of Gunatilake** – either normal stream or one of the channel change pictures are selected for decoding).

**Regarding claim 6:** Gunatilake discloses means for decoding redundant picture syntax in compliance with the JVT/H.264/MPEG AVC compression standard (**claim 21 of Gunatilake** – decoder is an MPEG decoder, and thus decodes redundant picture syntax in compliance with the JVT/H.264/MPEG AVC compression standard).

**Regarding claim 7:** Gunatilake discloses means for decoding channel change pictures from user data of corresponding normal stream pictures (**para. 37, lines 4-10 and para. 38, lines 1-6 of Gunatilake**).

**Regarding claim 8:** Gunatilake discloses means for responding to a signal from an encoder indicating whether to use normal stream or channel change stream pictures for subsequent channel change stream intra-coded pictures (**para. 38, lines 1-14 of Gunatilake**).

**Regarding claim 11:** Gunatilake discloses at least one of:  
selecting a compressed picture to decode from one of a normal stream and a channel change stream (**para. 38 of Gunatilake** – either normal stream or one of the channel change pictures are selected for decoding);

upsampling lower resolution channel change stream pictures; decoding redundant picture syntax in compliance with the JVT standard (**step not taught by Gunatilake, but claim language merely requires “at least one of” the recited steps be taught**);

decoding channel change pictures from user data of corresponding normal stream pictures (**para. 37, lines 4-10 and para. 38, lines 1-6 of Gunatilake**);

responding to a signal from an encoder indicating whether to use normal stream or channel change stream pictures for subsequent channel change stream intra-coded pictures (**para. 38, lines 1-14 of Gunatilake**); and

postprocessing the output of the normal decoder to reduce the abruptness of a transition from lower-quality to normal quality output (**step not taught by Gunatilake, but claim language merely requires “at least one of” the recited steps be taught**).

#### **Claim Rejections - 35 USC § 103**

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. **Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunatilake (US-2004/0194134) in view of Brooks (US-7,143,432).**

**Regarding claim 2:** Gunatilake discloses a lower-resolution decoding portion (**fig. 3 (309) of Gunatilake**) in signal communication with the demultiplexor (**fig. 3(309→304) of Gunatilake**) for receiving the compressed channel change stream (**para. 38, lines 1-6 of Gunatilake**); at least one channel change frame store (**fig. 3(320) of Gunatilake**) in signal communication with the lower-resolution decoding portion (**fig. 3(309→320) of Gunatilake**) for storing reference pictures (**para. 37, lines 4-18 of Gunatilake**).

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Gunatilake does not disclose expressly an up-sampling unit in signal communication with the lower-resolution decoding portion for up-sampling decompressed video data and selectably outputting said data to at least one of the at least one normal frame store and a display.

Brooks discloses an up-sampling unit in signal communication with the lower-resolution decoding portion for up-sampling decompressed video data and selectably outputting said data to at least one of the at least one normal frame store and a display (**fig. 6A(860) and column 18, lines 8-18 of Brooks**).

Gunatilake and Brooks are analogous art because they are from the same field of endeavor, namely control, processing and output of digital video image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to up-sample the decompressed video data before outputting to a display, as taught by Brooks. The motivation for doing so would have been to provide a better output video by matching the characteristics of the display. Therefore, it would have been obvious to combine Brooks with Gunatilake to obtain the invention as specified in claim 2.

**Regarding claim 5:** Gunatilake does not disclose expressly means for up-sampling lower resolution channel change stream pictures.

Brooks discloses means for up-sampling lower resolution stream pictures (**fig. 6A(860) and column 18, lines 8-18 of Brooks**).

Gunatilake and Brooks are analogous art because they are from the same field of endeavor, namely control, processing and output of digital video image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to up-sample the video data before outputting to a display, as taught by Brooks. By combination with Gunatilake,

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the stream pictures would be the channel change stream pictures. The motivation for doing so would have been to provide a better output video by matching the characteristics of the display. Therefore, it would have been obvious to combine Brooks with Gunatilake to obtain the invention as specified in claim 5.

**6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gunatilake (US-2004/0194134) in view of Laksono (US-7,675,972).**

**Regarding claim 3:** Gunatilake does not disclose expressly a post-processing filter in signal communication with the normal decoding portion for post-processing decompressed video data and selectably outputting said data to at least one normal frame store.

Laksono discloses a post-processing filter in signal communication with a normal decoding portion for post-processing decompressed video data and selectably outputting said data to at least one normal frame store (**column 3, lines 22-37 of Laksono** – post-processing performed so as to rapidly update motion vectors and improve video encoding/decoding).

Gunatilake and Laksono are analogous art because they are from the same field of endeavor, namely digital video encoding and decoding. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to post-process the decompressed video data and selectably outputting said data to at least one normal frame store, as taught by Laksono. The motivation for doing so would have been to improve the video data processing speed by more rapidly updating the motion vectors. Therefore, it would have been obvious to combine Laksono with Gunatilake to obtain the invention as specified in claim 3.



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**7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gunatilake (US-2004/0194134) in view of Reitmeier (US-6,118,498).**

**Regarding claim 9:** Gunatilake does not disclose expressly means for post-processing the output of the normal decoder to reduce the abruptness of a transition from lower-quality to normal quality output.

Reitmeier discloses means for post-processing the output of the normal decoder to reduce the abruptness of a transition from lower-quality to normal quality output (**column 5, lines 37-43 of Reitmeier**).

Gunatilake and Reitmeier are analogous art because they are from the same field of endeavor, namely control, processing and output of digital video image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to post-process the output of the normal decoder to reduce the abruptness of a transition from lower-quality to normal quality output, as taught by Reitmeier. The motivation for doing so would have been to produce a higher-quality video output, containing less video artifacts. Therefore, it would have been obvious to combine Reitmeier with Gunatilake to obtain the invention specified in claim 9.

### **Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is (571)272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 571-272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James A Thompson/  
Primary Examiner, Art Unit 2625

29 April 2011